Proteomic Analysis of *Moniliophthora perniciosa* Necrotrophic Phase

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Moniliophthora perniciosa (*Mp*) is the causal agent of witches' broom disease of cacao (*Theobroma cacao* L.). *Mp* is a hemibiotrophic fungus; the biotrophic phase, initiates the disease and is characterized by a monokaryotic mycelium, while the necrotrophic phase is characterized by a dikaryotic mycelium and leads to the necrosis of the infected tissues. The study of the necrotrophic phase was conducted on artificial system (cookies), the only solid medium allowing basidiocarp and basidiospore production. During the culture of *Mp* in cookies, six different developmental phases were observed according to the mycelium color or the organ produced: white, yellow, pink, dark pink (or pre-water stress), primordium and basidiocarp. The objective of this work was to identify proteins specific of each phase, particularly the phases preceding the basidiocarp formation. Proteins were extracted using the ADP method, followed by a simple cleaning using SDS-dense and phenol. The quantification was made using the 2-D quantification kit. The proteins were extracted in triplicate and separated using a 12% Bi-dimensional SDS-PAGE gel. The 2D maps showed approximately 300 spots for gel, and present differential protein expression patterns. Spots were cut from gels and analyzed by mass spectrometry. At the basidiocarp stage, we identified several proteins potentially involved in its formation, which may be good candidates for further analysis required to understand the mode of spread of the fungus. To our knowledge, this is the first analysis of *Mp* development phases by proteomics.

Word Keys: Bi-dimensional SDS-PAGE, mass spectrometry, basidiocarp
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